


Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	PCT Docket No. SRI1P035	Application No.: 10/053,511
	Applicant: Kornbluh, et al.	Group 2838
	Filing Date January 16, 2002	

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
MB	A1	5,977,685	11/02/99	Kurita, et al.			06/03/96
	A2	6,060,811	05/09/00	Fox, et al.			07/25/97
	A3	6,249,076	06/19/01	Madden, et al.			04/14/99
	A4	4,885,783	12/05/89	Whitehead, et al.			04/10/87

Other Documents


Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
MB	B1	Ashley, S., "Smart Skis and Other Adaptive Structures", <i>Mechanical Engineering</i> , November 1995, pp. 77-81
	B2	Bar-Cohen, Yoseph, JPL, <i>Worldwide Electroactive Polymers, EAP (Artificial Muscles) Newsletter</i> , Vol. 3, No.1, June 2001
	B3	Bharti, V., H. S. Xu, G. Shanthi, and Q. M. Zhang, "Polarization and Structural Properties of High Energy Electron Irradiated Poly(vinylidene fluoride-trifluoroethylene) Copolymer Films," to be published in <i>J. Appl. Phys.</i> (2000).
	B4	Bobbio, S., M Kellam, B. Dudley, S. Goodwin Johansson, S. Jones, J. Jacobson, F. Tranjan, and T. DuBois, "Integrated Force Arrays," in <i>Proc. IEEE Micro ElectroMechanical Systems Workshop</i> , Fort Lauderdale, Florida February 1993.
	B5	Calvert, P. and Z. Liu, "Electrically stimulated bilayer hydrogels as muscles," <i>Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices</i> , March 1-2, 1999, Newport Beach, California, USA, pp. 236-241.
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	Date Considered	4-24-03

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MB	C1	Elhami, K., and B. Gauthier-Manuel, "Electrostriction Of The Copolymer Of Vinylidene-Fluoride And Trifluoroethylene," <i>J. Appl. Phys.</i> Vol. 77 (8), 3987-3990, April 15, 1995.
	C2	Hirose, S., Biologically Inspired Robots: Snake-like Locomotors and Manipulators, " <i>Development of the ACM as a Manipulator</i> ", Oxford University Press, New York, 1993, pp.170-172.
	C3	Kornbluh, R., G. Andeen, and J. Eckerle, "Artificial Muscle: The Next Generation of Robotic Actuators," presented at the Fourth World Conference on Robotics Research, SME Paper M591-331, Pittsburgh, PA, September 17-19, 1991.
	C4	Kornbluh, R., R. Pelrine, J. Joseph, "Elastomeric Dielectric Artificial Muscle Actuators for Small Robots," <i>Proceedings of the Third IASTED International Conference on Robotics and Manufacturing</i> , June 14-16, 1995, Cancun, Mexico.
	C5	Kornbluh, R., Pelrine, R., Eckerle, J., Joseph, J., "Electrostrictive Polymer Artificial Muscle Actuators", IEEE International Conference on Robotics and Automation, Leuven, Belgium, 1998
	C6	Kornbluh, R., R. Pelrine, Jose Joseph, Richard Heydt, Qibing Pei, Seiki Chiba, 1999. "High-Field Electrostriction Of Elastomeric Polymer Dielectrics For Actuation", <i>Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices</i> , March 1-2, 1999, Newport Beach, California, USA. pp. 149-161.
	C7	Kornbluh, R. D and R. E. Pelrine., "Kornbluh, R., R. Pelrine, Q. Pei, S. Oh, and J. Joseph, 2000. "Ultrahigh Strain Response of Field-Actuated Elastomeric Polymers," <i>Proceedings of the 7th SPIE Symposium on Smart Structures and Materials-Electroactive Polymers and Devices (EAPAD) Conference</i> , March 6-8, 2000, Newport Beach, California, USA, pp. 51-64
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MB	D1	Liu, C., Y. Bar-Cohen, and S. Leary, "Electro-statically stricted polymers (ESSP)," Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California, USA., pp. 186-190.
	D2	Ohara, K., M. Hennecke, and J. Fuhrmann, "Electrostriction of polymethylmethacrylates," <i>Colloid & Polymer Sci.</i> Vol 280, 164-168 (1982).
	D3	Pei <i>et al.</i> , "Improved Electroactive Polymers", U.S. Patent Application No. 09/619,847, filed July 20, 2000, 70 pages
	D4	Pelrine, R., R. Kornbluh, and Q. Pei. "Electroactive Polymer Transducers And Actuators", U.S. Patent Application No. 09/620,025, filed July 20, 2001, 58 pages.
	D5	Pelrine, R. and Kornbluh, "Electroactive Polymer Devices," U.S. Patent Application No. 09/619,846, filed July 20, 2000, 69 pages
	D6	Pelrine, R, R. Kornbluh, J. Joseph, and S. Chiba, "Electrostriction of Polymer Films for Microactuators," <i>Proc. IEEE Tenth Annual International Workshop on Micro Electro Mechanical Systems</i> , Nagoya, Japan, January 26-30, 1997, pp. 238-243.
	D7	Pelrine, R., R. Kornbluh, and J. Eckerle. "Energy Efficient Electroactive Polymers and Electroactive Polymer Devices", U.S. Patent Application No. 09/779,373, filed February 7, 2001.
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
MB	E1	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1998 <i>Final Report on Artificial Muscle for Small Robots</i> , ITAD-3482-FR-99-36, SRI International, Menlo Park, California, 1999
	E2	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1999 <i>Final Report on Artificial Muscle for Small Robots</i> , ITAD-10162-FR-00-27, SRI International, Menlo Park, California, 2000
	E3	Pelrine, R., R. Kornbluh, Q. Pei, and J. Joseph, "High Speed Electrically Actuated Elastomers with Over 100% Strain," <i>Science</i> , Vol. 287, No. 5454, pages 1-21, 2000
	E4	Pelrine, R., Roy Kornbluh, Jose Joseph, Qibing Pei, Seiki Chiba "Recent Progress in Artificial Muscle Micro Actuators," , SRI International, Tokyo, 1999 MITI/NEEDOIMNIC, 1999
	E5	Pelrine, R., J. Eckerle, and S. Chiba, "Review of Artificial Muscle Approaches," invited paper, in <i>Proc. Third International Symposium on Micro Machine and Human Science</i> , Nagoya, Japan, October 14-16, 1992
	E6	Smela, E., O. Inganäs, and I. Lundström, "Controlled Folding of Micrometer-size Structures," <i>Science</i> , Vol. 268, pp. 1735-1738 (23 June 1995).
	E7	Uchino, K. 1986. "Electrostrictive Actuators: Materials and Applications," <i>Ceramic Bulletin</i> , 65(4), pp. 647-652, 1986
	E8	Pelrine <i>et al.</i> , "Electroactive Polymer Generators", U.S. Patent Application No. 09/619,848, filed July 20, 2000, 69 pages
	E9	Pelrine, R., R. Kornbluh, J. Eckerle "Monolithic Electroactive Polymers" U.S. Patent Application No. 09/779,203 filed February 7, 2001
↓	E10	Kornbluh, R., R. Pelrine, Q. Pei and J. Eckerle "Electroactive Polymer Sensors", U.S. Patent Application No. 10/007,705, filed December 6, 2001.
Examiner	PRIME EXAMINER MB	Date Considered 4-24-03

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MB	F1	Pelrine, R. R. Kornbluh, J. Eckerle, S. Stanford, S. Oh and P. Garcia, "Biologically Powered Electroactive Polymer Generators", U.S. Patent Application No. 09/792,877, filed February 23, 2001
	F2	Lakes, R.S., "Extreme damping in compliant composites with a negative stiffness phase", Philosophical Magazine Letters, 81, 95-100 (2001)
	F3	Lakes, R.S., "Extreme Damping in Composite materials with a negative stiffness phase", Physical Review Letters 86, 2897-2900, 26 March (2001).
	F4	Lakes, R.S., Lee, T., Bersie, A., and Wang Y.C., "Extreme damping in composite materials with negative stiffness inclusions", Nature, 410,565-567 March (2001).
	F5	Pei, Qibing, R. Pelrine, R. Kornbluh, S. Jonasdottir, V. Shastri, R. Full, "Multifunctional Electroelastomers: Electroactive Polymers Combining Structural, Actuating, and Sensing Functions, ITAD-433-PA-00-123, available at www.sri.com-publications , January 17, 2001.
	F6	Kornbluh, R., R. Pelrine, Q. Pei and V. Shastri "Electroactive Polymer (EAP) Actuators as Artificial Muscles - Reality, Potential and Challenges", Chapter 16, available from SPIE Press on May 2001.
Examiner <i>[Signature]</i> PRIMARY EXAMINER ART UNIT 212	Date Considered <i>4/24/03</i>	

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